

IN THE CLAIMS

Claims 1-20 (canceled)

Claim 21 (new): A method for making a semiconductor device comprising:

forming on a substrate a high-k gate dielectric layer;

applying a wet chemical treatment to the high-k gate dielectric layer to remove impurities from that layer and to increase the oxygen content of that layer;

forming a capping layer that comprises silicon and that is less than about five monolayers thick on the high-k gate dielectric layer;

oxidizing the capping layer by exposing the capping layer to a solution that comprises hydrogen peroxide to form a capping dielectric oxide on the high-k gate dielectric layer; and then

forming a gate electrode on the capping dielectric oxide.

Claim 22 (new): A method for making a semiconductor device comprising:

forming a high-k gate dielectric layer on a substrate, the high-k gate dielectric layer being less than about 60 angstroms thick and comprising a material selected from the group consisting of hafnium oxide, zirconium oxide, titanium oxide, and aluminum oxide;

applying a wet chemical treatment to the high-k gate dielectric layer to remove impurities from that layer and to increase the oxygen content of that layer;

forming on the high-k gate dielectric layer a silicon containing layer that is less than about five monolayers thick;

oxidizing the silicon containing layer to form a silicon dioxide layer on the high-k gate dielectric layer; and
forming a gate electrode on the silicon dioxide layer.